

## CLAIMS

What is claimed is:

- 1 1. A network, comprising:  
2 at least one transmitting device and at least one receiving device; and  
3 a bus coupled to between the devices to exchange frames, wherein each  
4 frame includes a data structure, at least one control structure, and a clock structure,  
5 and wherein a rising edge of each frame indicates the clock structure and a falling  
6 edge of each frame indicates that a structure that follows the falling edge of the frame  
7 is the data structure or the command structure, and wherein any receiving device in a  
8 set of devices is coupled to use a clock structure to adjust each phase of one or more  
9 of the frames to synchronize the frames with each other.
- 1 2. The network of claim 1 wherein the data structure comprises a predetermined  
2 number of encoded data field bits.
- 1 3. The network of claim 1 wherein the command structure comprises a  
2 predetermined number of encoded command/control field bits.
- 1 4. The network of claim 1 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command and the falling  
3 edge of the frame occurring at a second predetermined point in the control structure  
4 indicates a secondary set of commands.

1 5. The network of claim 1 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command word and the  
3 falling edge of the frame occurring at a second predetermined point in the control  
4 structure indicates a secondary set of command words, and wherein the falling edge of  
5 the frame occurring at one predetermined point in the data structure indicates a first  
6 data word and the falling edge of the frame occurring at a second predetermined point  
7 in the data structure indicates a secondary set of data words.

1 6. The network of claim 1 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command word and the  
3 falling edge of the frame occurring at a second predetermined point in the control  
4 structure indicates a secondary set of command words, and wherein the falling edge of  
5 the frame occurring at one predetermined point in the data structure indicates a first  
6 data word and the falling edge of the frame occurring at a second predetermined point  
7 in the data structure indicates a secondary set of data words, and wherein the  
8 secondary set of command words is greater than the secondary set of data words.

1 7. A method for processing data in a network, comprising:  
2 transmitting computer data signals embodied in carrier waves from a  
3 transmitting device to a receiving device, wherein each computer data signal includes  
4 a data structure embodied in an encoded frame, at least one control structure embodied  
5 in the encoded frame, and a clock structure embodied in the encoded frame, and  
6 wherein a rising edge of the encoded frame indicates the clock structure and a falling  
7 edge of the frame indicates whether what follows the falling edge of the frame is the  
8 data structure or the command structure; and  
9 receiving the computer data signals at the receiving device and using the  
10 clock to adjust the phase of the frames to synchronize the frames with each other.

1 8. The method of claim 7 wherein transmitting computer data signals embodied in  
2 carrier waves from a transmitting device to a receiving device comprises encoding the  
3 data structure with a predetermined number of data field bits.

1 9. The method of claim 7 wherein transmitting computer data signals embodied in  
2 carrier waves from a transmitting device to a receiving device comprises encoding the  
3 command structure with a predetermined number of command/control field bits.

1 10. The method of claim 7 wherein transmitting computer data signals embodied in  
2 carrier waves from a transmitting device to a receiving device comprises dropping the  
3 falling edge of the frame at one predetermined point in the control structure to indicate  
4 a first command and at a second predetermined point in the control structure to  
5 indicate a secondary set of commands.

1 11. The method of claim 7 wherein transmitting computer data signals embodied in  
2 carrier waves from a transmitting device to a receiving device comprises:

3 dropping the falling edge of the frame at one predetermined point in the  
4 control structure to indicate a first command word and at a second predetermined  
5 point in the control structure to indicate a secondary set of command words; and

6 dropping the falling edge of the frame at one predetermined point in the  
7 data structure to indicate a first data word and at a second predetermined point in the  
8 data structure indicates a secondary set of data words, and wherein the secondary set  
9 of command words is greater than the secondary set of data words.

1 12. The method of claim 7 wherein transmitting computer data signals embodied in  
2 carrier waves from a transmitting device to a receiving device comprises:

3 dropping the falling edge of the frame at one predetermined point in the  
4 control structure to indicate a first command word and at a second predetermined  
5 point in the control structure to indicate a secondary set of command words; and

6 dropping the falling edge of the frame at one predetermined point in the  
7 data structure to indicate a first data word and at a second predetermined point in the  
8 data structure indicates a secondary set of data words.

1 13. A computer data signal embodied in a carrier wave for communicating between  
2 a first device and a second device, wherein the first and second devices communicate  
3 with each other over a bus, the computer data signal comprising:

4 a data structure embodied in a frame; and

5 at least one control structure embodied in the frame and preceding the  
6 data structure; and

7 a clock structure embodied in the frame, wherein a rising edge of the  
8 frame defines the clock structure, and wherein a falling edge of the frame indicates  
9 that what follows the falling edge of the frame is a data structure or a control structure.

1 14. The computer data signal of claim 13 wherein the data structure comprises a  
2 predetermined number of encoded data field bits.

1 15. The computer data signal of claim 13 wherein the command structure  
2 comprises a predetermined number of encoded command/control field bits.

1 16. The computer data signal of claim 13 wherein the falling edge of the frame  
2 occurring at one predetermined point in the control structure indicates a first command  
3 and the falling edge of the frame occurring at a second predetermined point in the  
4 control structure indicates a secondary set of commands.

1 17. The computer data signal of claim 13 wherein the falling edge of the frame  
2 occurring at one predetermined point in the control structure indicates a first command  
3 word and the falling edge of the frame occurring at a second predetermined point in  
4 the control structure indicates a secondary set of command words, and wherein the  
5 falling edge of the frame occurring at one predetermined point in the data structure  
6 indicates a first data word and the falling edge of the frame occurring at a second  
7 predetermined point in the data structure indicates a secondary set of data words.

1 18. The computer data signal of claim 13 wherein the falling edge of the frame  
2 occurring at one predetermined point in the control structure indicates a first command  
3 word and the falling edge of the frame occurring at a second predetermined point in  
4 the control structure indicates a secondary set of command words, and wherein the  
5 falling edge of the frame occurring at one predetermined point in the data structure  
6 indicates a first data word and the falling edge of the frame occurring at a second  
7 predetermined point in the data structure indicates a secondary set of data words, and  
8 wherein the secondary set of command words is greater than the secondary set of data  
9 words.

1 19. A network, comprising:  
2 at least one transmitting device; and  
3 at least one receiving device coupled to the transmitting device to  
4 exchange frames, wherein each frame includes a data structure, at least one control  
5 structure, and a clock structure, and wherein a rising edge of the frame indicates the  
6 clock structure and the falling edge of the frame indicates that the structure that  
7 follows a falling edge of the frame is the data structure or the command structure, and  
8 wherein any receiving device is coupled to use the clock to adjust a phase of one or  
9 more of the frames to synchronize the frames with each other.

1 20. The network of claim 19 wherein the data structure comprises a predetermined  
2 number of encoded data field bits.

1 21. The network of claim 19 wherein the command structure comprises a  
2 predetermined number of encoded command/control field bits.

1 22. The network of claim 19 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command and the falling  
3 edge of the frame occurring at a second predetermined point in the control structure  
4 indicates a secondary set of commands.

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1 23. The network of claim 19 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command word and the  
3 falling edge of the frame occurring at a second predetermined point in the control  
4 structure indicates a secondary set of command words, and wherein the falling edge of  
5 the frame occurring at one predetermined point in the data structure indicates a first  
6 data word and the falling edge of the frame occurring at a second predetermined point  
7 in the data structure indicates a secondary set of data words.

1 24. The network of claim 19 wherein the falling edge of the frame occurring at one  
2 predetermined point in the control structure indicates a first command word and the  
3 falling edge of the frame occurring at a second predetermined point in the control  
4 structure indicates a secondary set of command words, and wherein the falling edge of  
5 the frame occurring at one predetermined point in the data structure indicates a first  
6 data word and the falling edge of the frame occurring at a second predetermined point  
7 in the data structure indicates a secondary set of data words, and wherein the  
8 secondary set of command words is greater than the secondary set of data words.